Successful Methods

A Magazine of Construction Service

Published by SUCCESSFUL METHODS, Inc.
S. T. HENRY, President — WILLIAM JABINE, Secretary and Editorial Director
141 Centre St., New York City, N. Y.

Vol. 8 — MARCH, 1926 — No. 3

On an Even Keel

THE outlook for a big year of construction work, taking the country over, is favorable. Here and there conditions are booming. There also are some dark spots on the map. But on the whole there is unusual stability. As is generally the case when business is flush, there are indications of a slackening off. These seem to be more pyschological than actual. The point of view that fosters them is healthy at this time. It appears to be conservatism rather than the fear which usually brings about a slump. And as present price levels are not unseasonable, in most lines, and inventories are not big, a recession, if it comes soon, would likely be minor and of short duration.

All this reflects the sober lesson that most business men learned right after the war. With the prospects that that lesson will still be remembered for a while yet, we have an excellent chance to continue on an even keel.

Do Your Feet Itch to Go Back?

SPRING is around the corner. There has been an unusual lot of work under way this winter, but the real drive on the country's biggest construction year is about to begin. A matter of days now, and thousands upon thousands of men who have been cooped up all winter will be out in the open again.

What thrill comes now to the man who really enjoys the drive and the hardships of construction work. For certainly a construction job that is pushed right is no lady's occupation. But for the men who like it there is no work that has the same fascination as building things in the open.

Out on the edges, where most of the big development projects are located, there is an atmosphere of the pioneer days that made this country what it is. Isolation, long hours, responsibilities, difficult problems are always to be met. At the time some of them seem too hard to make it all worth while. But as recompense over and above the usually modest pay are many returns that money cannot buy: the tang of the out-of-doors; the joy of helping to build some creative work; the freedom from city conditions, and a host of others which appeal to us differently, according to our make up. Even on the jobs in and around the centers of population there are many of these same appeals to men who just naturally belong out of doors.

To the men who have never worked inside this may all sound like glorifying a job. But ask the real red-blooded construction men who have "gone up" to an office desk. Those fellows who have been accustomed to needing three square meals a day. Those who have slept at night because they were dog tired. Those who have had the whole outdoors for elbow room. Talk to some of them. See how they enjoy their fancy food. Ask them how they sleep. Do they like the little boxes into which they have been promoted in order to hold down their bigger jobs?

Time to Tune Up

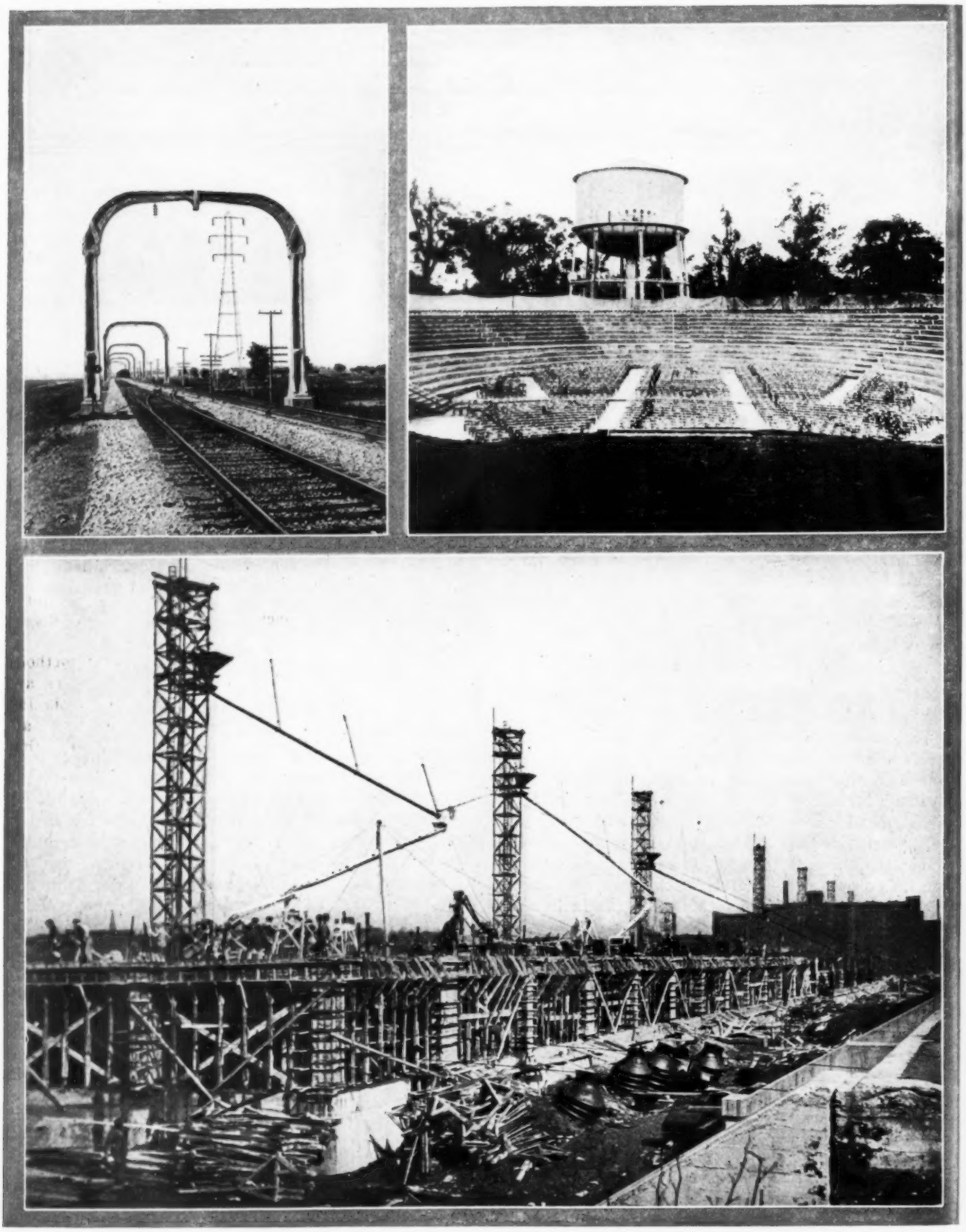
SPRING also brings the need to tune up all the equipment that is soon to be under the stress of the job again. Time was, not so long ago, that the outfit that went over its equipment ahead of the time to use it was the exception. Even a few years back that was not so serious. Now, with the extensive use of high-priced plant, there must be a careful, complete going over of every machine before the new work gets under way.

The old-fashioned hammer and cold-chisel methods also no longer can be used. The best mechanics are none too good for overhauling and reconditioning modern construction equipment. Reliable manufacturers are building construction machinery that ranks right along with the best of any outdoor plant. But the speed at which construction work is conducted these days, with the corresponding demand for faster and faster operation of the machinery used requires that every detail be right.

The best way to avoid breakdowns later is to go over every part of each used machine now. Make sure that the bearings are in good condition, especially that they are lined up right. See to it that no parts are missing, and that none is broken. Go over every gas engine from fuel tank to the exhaust. Careful inspection of boilers is advisable, even if the city or state inspectors have passed them. In short, do not slight a single part of a single machine on which you are going to depend later. And be absolutely certain that the work is really done.

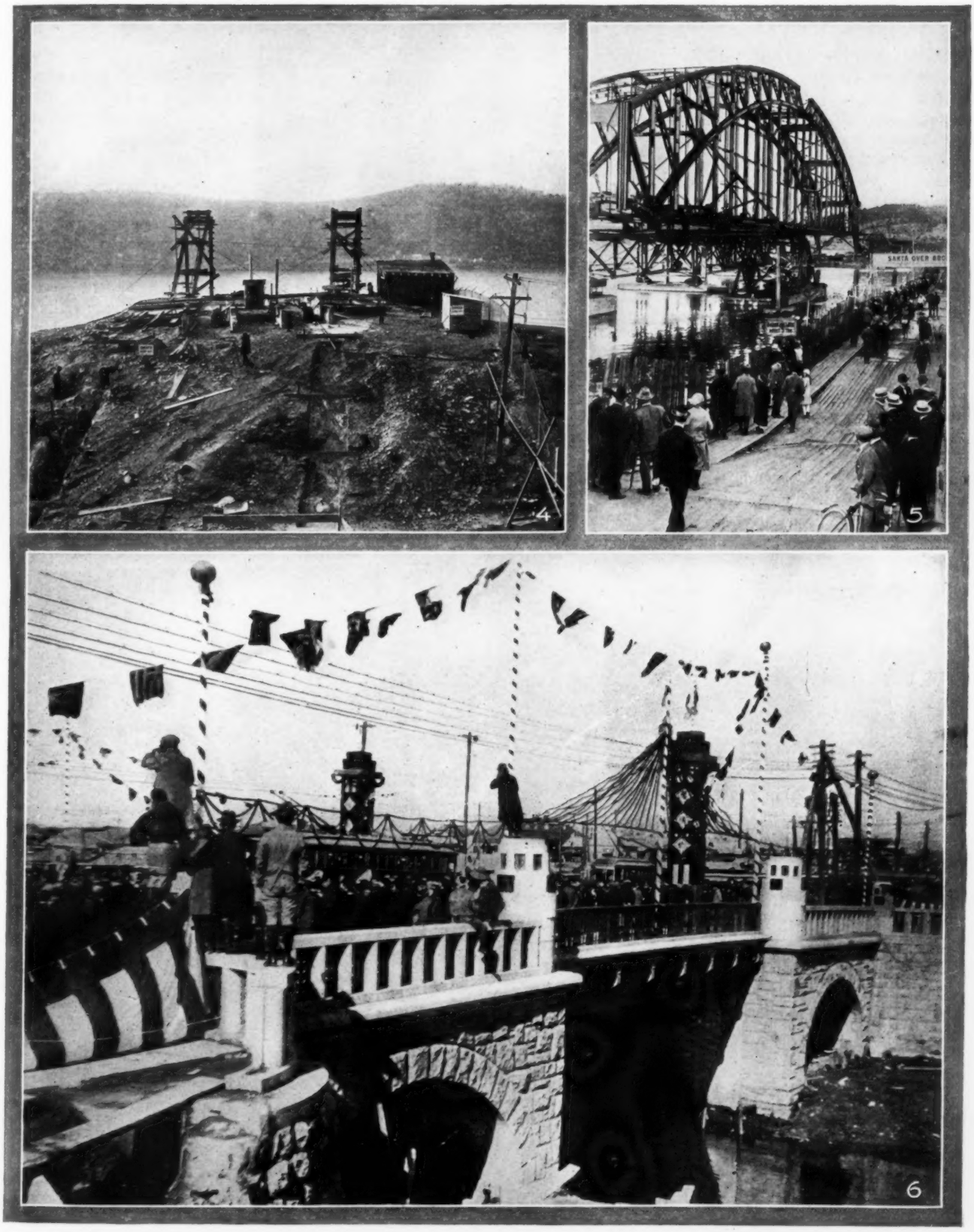
Of course, all this will cost something. But it certainly is cheaper to do it leisurely now in bad weather than to be paying for night and Sunday time next summer. And remember, too, that every good day lost is a day lost. Hours of reconditioning of plant now with two or three good mechanics will save days of fine weather later for the whole gang.

Three Concrete Jobs



1. Pre-cast concrete arches are used to support the wires on Henry Ford's newly electrified D. T. & I. Railroad. © Kadel & Herbert.
2. An abandoned reservoir in Jacksonville, Ill., has been turned into an open-air theater seating 5000 persons. © P. & A.
3. A long line of concrete chuting towers shows the magnitude of the new produce market being built in Chicago. © Underwood & Underwood.

A Trio of Bridges

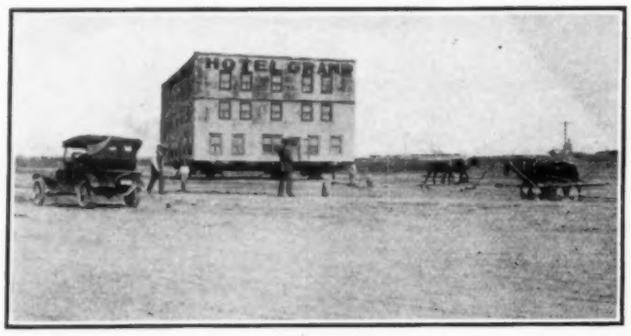


4. Work has begun on the new highway bridge over the Hudson River at Poughkeepsie. This photograph was taken from the eastern bank. © International.
5. Floating the main span of a big bridge into place near Stockholm, Sweden. © Kadel & Herbert.
6. The Kanda Bridge in Tokio, rebuilt since the great earthquake. This photograph was taken during the opening ceremonies. © P. & A.

THE AMERICAN FALLS DAM

Reclamation Project in Idaho Will Provide Second Largest Reservoir Built by Government—Utah Construction Company Has Contract

THE American Falls dam is being built across Snake River at American Falls, Idaho, by the Bureau of Reclamation of the United States, Department of Agriculture, in cooperation with irrigation districts and companies in Snake River Valley. Work was begun on the dam in February, 1925, and, according to the contract with the Utah Construction Company, must be completed by June 30, 1927.

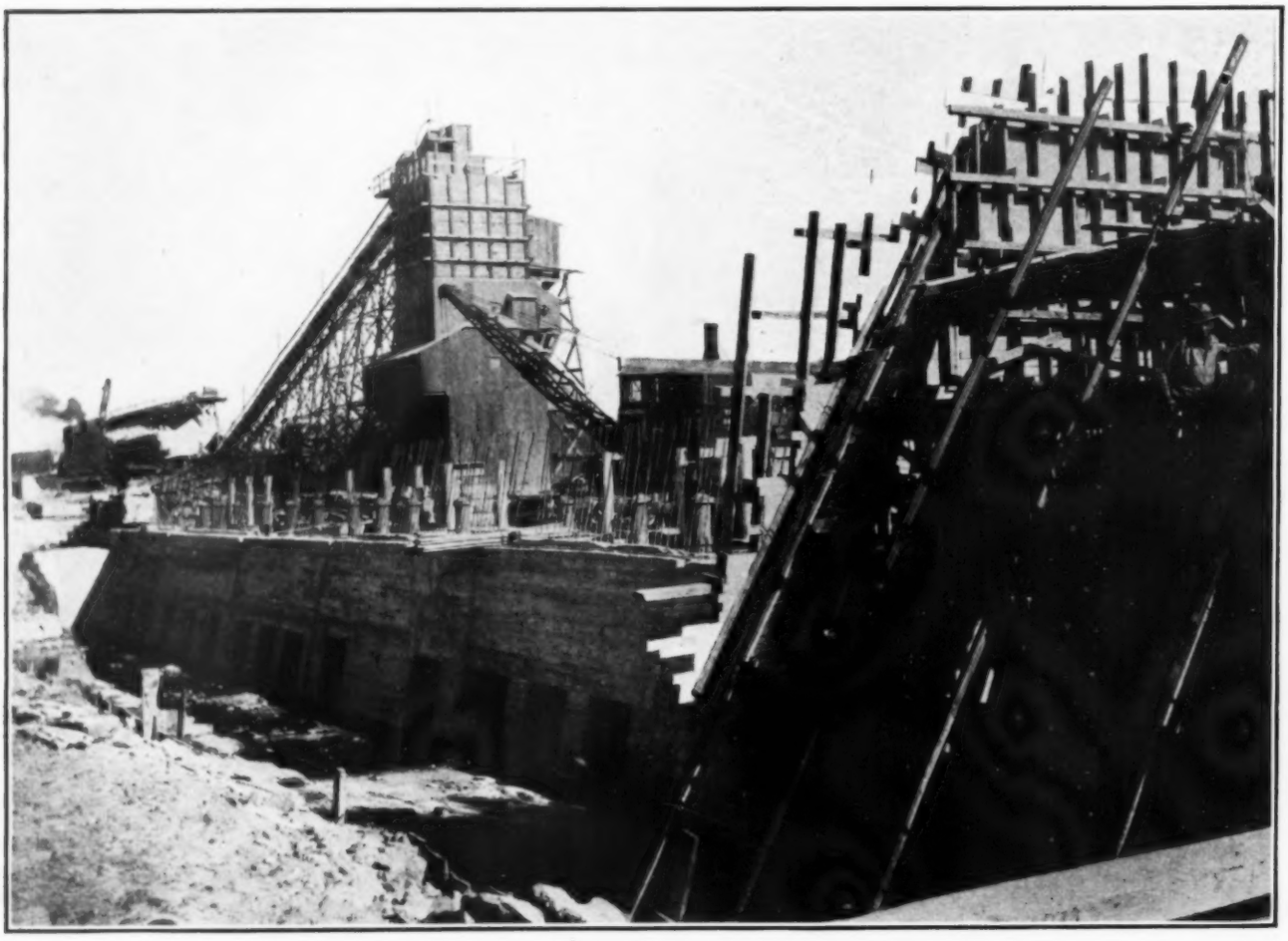


THE HOTEL GRAND TAKES A RIDE

The dam will be almost exactly a mile long, and, at its highest point, about 85 ft. high. That part of it across the river and for a considerable distance east of the river, is of solid massive concrete with an earth embankment at either end. When completed, the dam will contain about 160,000 cu. yd. of concrete, 1,255,000 lb. of reinforcing steel, and 2,256,000 lb. of structural steel, operating gates, etc. A roadway will lead across the top of the dam.

The reservoir which the dam will create will have a capacity of 1,700,000 acre-feet, covering an area of 56,000 acres. This will be the second largest reservoir built by the Bureau of Reclamation. It will furnish a total or partial water supply to some 750,000 acres of land, most of which is now in a high state of cultivation.

Water will be discharged through the dam by means of 20 gates each 5 ft. sq. In addition, two penstocks, each 15 ft. in diameter, will furnish water to the Idaho Power Company's plant situated below the dam on the east bank of the river, and four penstocks of the same

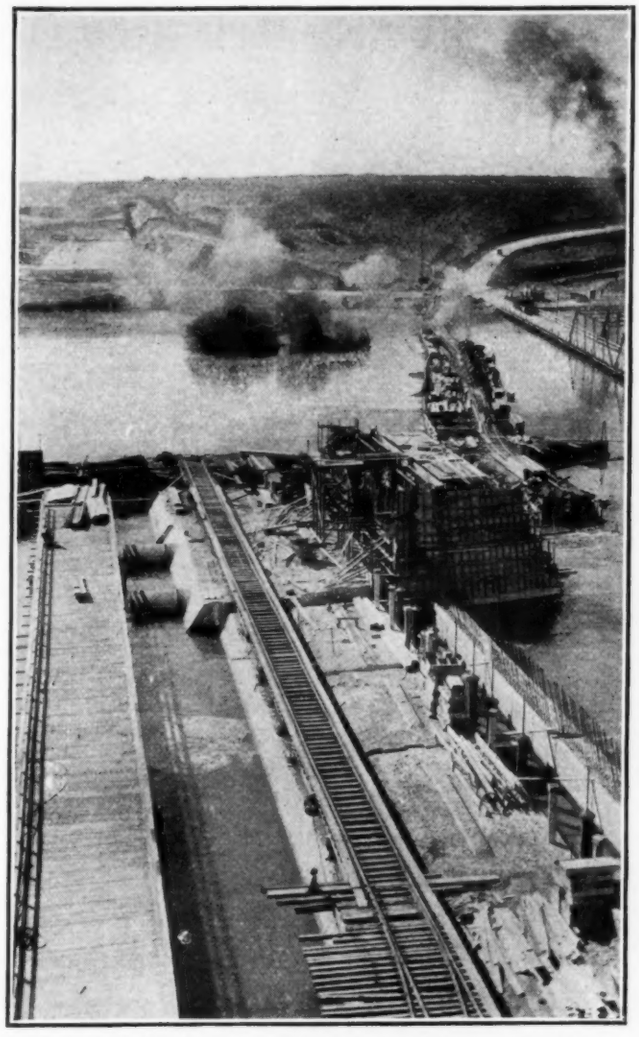


NEARLY READY TO TURN WATER THROUGH OUTLET GATES OF COFFERDAM

size will supply water to a proposed plant to be built by the United States on the west bank of the river, with a probable capacity of 40,000 hp.

About two miles of the main line of the Oregon Short Line Railroad, including depot, grounds, sidings, switches, etc., will be flooded and have been moved to higher ground. The company's bridge across the Snake River has been raised nearly 22 ft., this work being done without interruption to traffic.

As about three-fourths of the old town of American Falls will be submerged, a new townsite has been laid out above the reservoir to which the buildings in the old town have been moved. Streets in the new location have been graded and gravelled, sidewalks and sewer and water systems built, trees planted, parks laid out, etc. A large, new high school building, a new court house, and numerous business buildings have been erected.



FIRST SECTION OF DAM UNDER CONSTRUCTION
NEW WAGON BRIDGE BEING BUILT IN BACKGROUND

Irrigation projects and districts have been advanced more than $3,000,000 toward the construction of the dam. The entire cost of the development will amount to $8,000,000. The cost of the dam itself will be $1,281,000, that being the amount of the bid submitted by the successful bidder, the Utah Construction Company.

The Snake River Valley is one of the largest irrigation valleys on this continent. It includes thousands of irrigated farms with a total population of 250,000. A part of the valley is divided into two irrigation districts consisting of the American Falls Irrigation District and the Empire Irrigation District. In addition there are 60 canals that supply water to areas varying from 1,000 to 100,000 acres in extent. The Minidoka Reclamation project, one of the largest government projects, is also located in the Snake River Valley and obtains its irrigation from the same water shed.

The present water supply of the irrigation districts in the Snake River Valley is inadequate and the decision to build the new reservoir was reached as a result of the present situation. According to the contracts made with the Interior Department the American Falls Reservoir District and the Empire Irrigation District, in addition to the farms benefited by the new storage from 60 other canals, will pay two-thirds of the cost of the new reservoir while the government will pay approximately one-third covering the additional water for the Minidoka project. It is a coöperative project in every sense of the phrase.

THE ENTIRE TOWN OF AMERICAN FALLS WAS MOVED

COMPRESSED AIR AND THE ROAD BUILDER

Cuts Cost of Most Difficult Part of Work by Reducing Amount of Hand Labor Needed

BY R. N. BRYAN

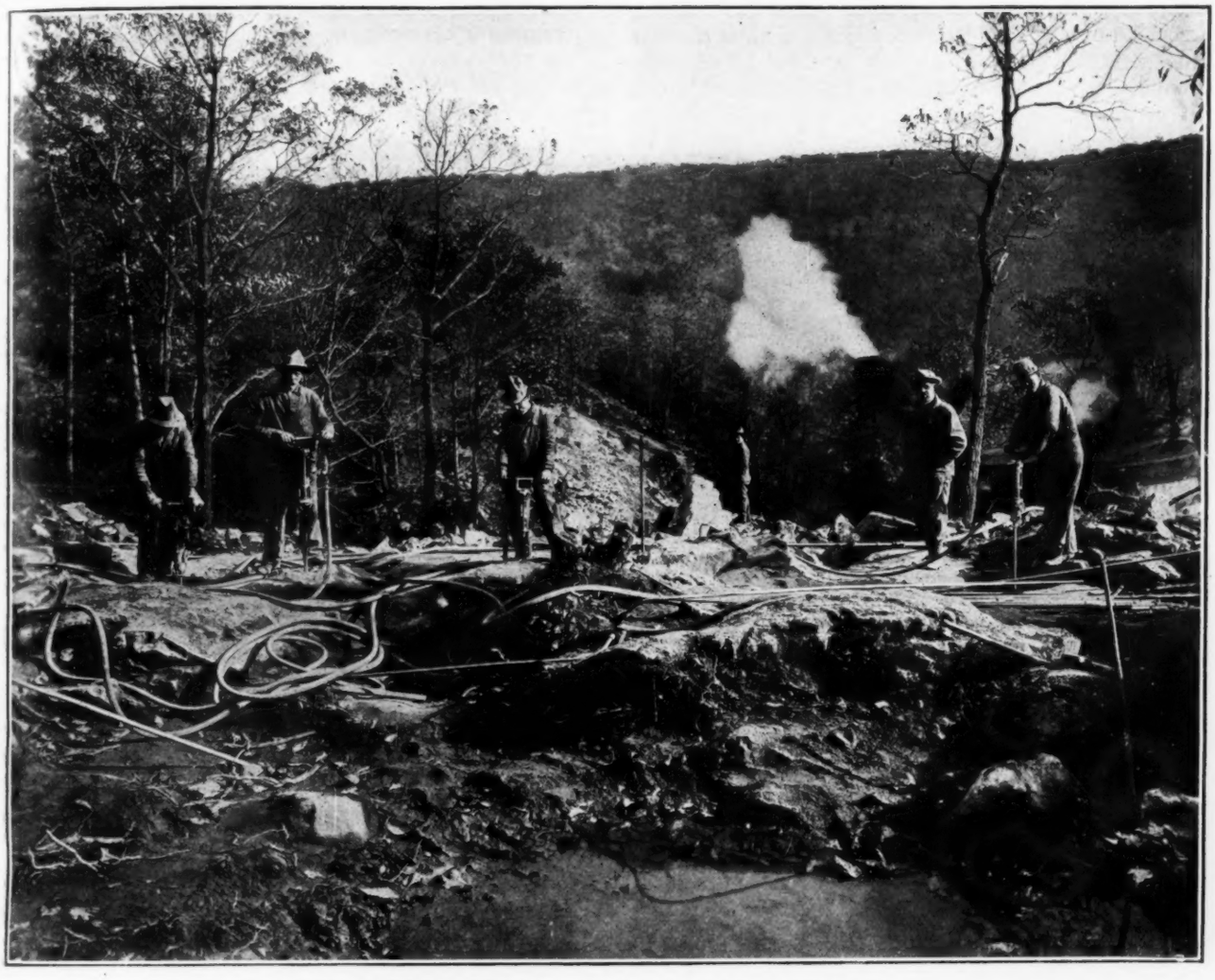
THE road builder rules a province not easy to master. He knows he is in for a battle the moment his shovel strikes the first hard ledge. Rock fights removal in a grim, stubborn fashion, and unless the contractor is equipped with tools which put the devil to rout, his course will be as rocky figuratively as it is literally.

Every season brings with it an increase in the number of miles of roads under construction. The number of men available to build roads, however, does not increase proportionately. This means that the amount of work which one man can do must ever be on the increase. In turn, the successful contractor must supply his men with those labor-aiding devices which will enable them to do their work with the greatest speed and efficiency.

GETTING OUT THE ROCK ON A ROAD JOB

Rock removal constitutes one of the biggest

A ROADSIDE CRUSHING PLANT IN WHICH COMPRESSED AIR WAS USED FOR ALL DRILLING



ON THE FAMOUS BEAR MOUNTAIN BRIDGE APPROACH

and most costly items of road building and the drilling incident to blasting constitutes the biggest item of rock removal. It is, therefore, essential that careful attention be given to the proper selection of the road builder's rock drilling equipment.

Many contractors have found that portable air compressors and "Jackhamer" drills make it decidedly profitable to use machine drilling on every job, large or small. Yet, even today, jumper steels and sledges are being used on many jobs. This is due to the fact that an accurate comparison of machine and hand drilling costs has not always been brought to the attention of contractors using hand methods.

For example, consider the hand drilling gang working in medium hard rock. Three men are required to put down a hole. One sits on the back of a bucket and holds the steel, while the other two strike it on the end with sledges. The three of them drill only 8 or 10 ft. of hole per day—an average of 9 ft. These three are paid $4.50 per day, making the cost of 9 ft. of hole $13.50, or $1.50 per foot. This is not the only cost, however, for to this slow-moving gang is properly charged overhead, costly delays, and other items for which it is responsible.

Now consider the cost of machine drilling with one BCR-430 "Jackhamer" operated by a 5x5 Type Twenty Portable Compressor. Assuming that it is actually used to drill but 15 min. out of every hour, one man could drill 46 ft. of hole in 8 hr., and the cost would be only 42 cents per foot based on the following figures:

Labor, one operator	$5.00
Interest, depreciation and maintenance at 15% per year of 300 working days—$2,000.00 investment	1.00
8 gallons of gasoline at 20 cents	1.60
2 quarts oil at 20 cents	0.40
Sharpening steel—one bit for 2 ft. of hole—at 50 cents per bit	11.50
Cost of 46 feet of hole	$19.50

An actual saving of $1.08 per ft. of hole drilled.

One road builder, after work which extended over a period of 13 months, showed a saving of $1.34 per foot in favor of the compressed air methods suggested above. This was accomplished despite the fact that the job was almost wholly boulder work. Very little ledge rock was encountered. Two others write that they have reduced their operating time and expenses over 50 per cent since they adopted pneumatic tools.

One of the largest and most important road build-

ing projects undertaken in recent years was the construction of the Bear Mountain Highway and the new Hudson River Bridge. Rugged features of the Bear Mountain country made this a drilling and blasting job of unusual magnitude. It is a conservative statement to say that the project would have been absolutely out of the question without a proper array of compressors and air drills. The accompanying photographs, though inadequate, will give a few ideas of the uses to which air equipment was put. Two of them show the use of compressed air equipment on the Bear Mountain Bridge approach, and the others show how portable compressors prove their usefulness on the average highway job.

While drilling and blasting play a large part in road building, it is frequently the contractor's lot to resurface an old road or to lay an entirely new foundation. Days (and incidentally dollars) can be saved by the use of pneumatic paving breakers and asphalt cutters. Several contractors using paving breakers and portable compressors have submitted figures on the savings made with these tools. The contractors, in general, have used the machines extensively and have studied costs in detail, so that the following data covers representative jobs:

2 operators for concrete breakers at $5.00 each	$10.00
1 compressor operator and alternate paving breaker operator	6.00
Gasoline and oil for compressor	3.00
Repair, upkeep and depreciation on compressor and equipment	5.00
Total cost per day	$24.00

The men with this equipment broke down approximately 500 sq. ft. of 1½-in. asphalt with a 6-in. concrete base in 8 hr. At a daily cost of $24 this amounted to .048 cent per sq. ft.

Another company from which data was obtained figured their costs as follows:

2 operators for concrete breakers at $5.50 each	$11.00
1 compressor operator and alternate paving breaker operator	6.60
Gasoline and oil for compressor	2.80
Repair, upkeep and depreciation on compressor and equipment	5.00
Total cost per day	$25.40

This outfit broke down approximately 450 sq. ft. of 1½-in. asphalt with a 6-in. concrete base in 8 hr. At a daily cost of $25.40, this amounted to .057 cent per sq. ft. By taking an average of this figure and the

ANOTHER SCENE ON THE BEAR MOUNTAIN JOB SHOWING THE DIFFICULT CHARACTER OF THE WORK

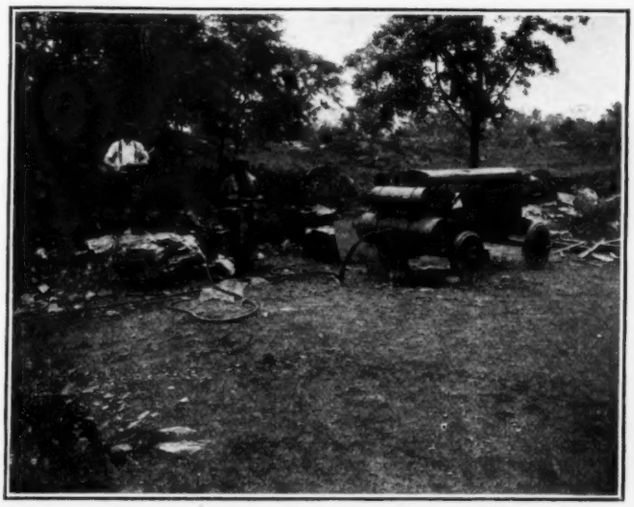
one cited previously, we have a cost of .052 cent per sq. ft. of pavement broken up.

Deep cut, heavy excavation jobs are economically handled by tripod-mounted X-70 hammer drills, which drill very deep holes of comparatively large diameter. This method of drilling permits the use of extra heavy powder charges and the breaking of great yardage at a single blast.

Convincing as one finds the foregoing data, there is yet another place where the use of pneumatic tools cuts down the operator's overhead expense. Under

A PORTABLE COMPRESSOR CAN GO ANYWHERE

present-day Compensation Laws, it is necessary for all employers of labor to carry liability insurance covering possible accidents to workmen. The use of pneumatic equipment reduces the number of men by half. Automatically, therefore, the contractor's compensation insurance premium is reduced by half. It is also to be noted that when compressed air is used



GETTING RID OF A COUPLE OF BIG FELLOWS

there is much less likelihood of accidents than when hand methods are employed. This further reduces the chances of accidents on any one job.

As road building is an undertaking which requires continual moving of equipment, and as it frequently carries the contractor to isolated sections where stationary power sources are not available, the portable air compressor is by all means the logical unit for supplying air to his pneumatic tool outfit. The very nature of road building or road repair work calls for a power station which can be moved without loss of time and without a waste of labor. Delays are expensive. By the elimination of transit delays, many a road contractor has saved himself the original cost of his portable compressor and has put money into his pocket besides. The number of these units in daily use is conclusive evidence that portable air equipment is lowering road building costs and raising operating efficiency.

IOWA COMMISSION TAKES OVER MAINTENANCE

MAINTENANCE work on the primary roads of the State was taken over by the Iowa Highway Commission on Nov. 30 of last year. The Legislature would have found it hard to pick a more inconvenient time for making the change as the approach of winter made it necessary to make all arrangements for the removal of snow by a maintenance organization that had not had a good chance to find itself and settle down.

Almost immediately after the maintenance was taken over, a series of heavy falls of snow arrived on the scene and put the new division of the highway department to a prompt and severe test. Despite the newness of the work, the maintenance forces kept the roads clear in nearly every part of the State, although in a few sections where the storm was especially bad the roads were blocked for two days.

As a result of the storms the Highway Commission is planning to buy a number of tractors, snow plows, blade graders and other snow fighting equipment.

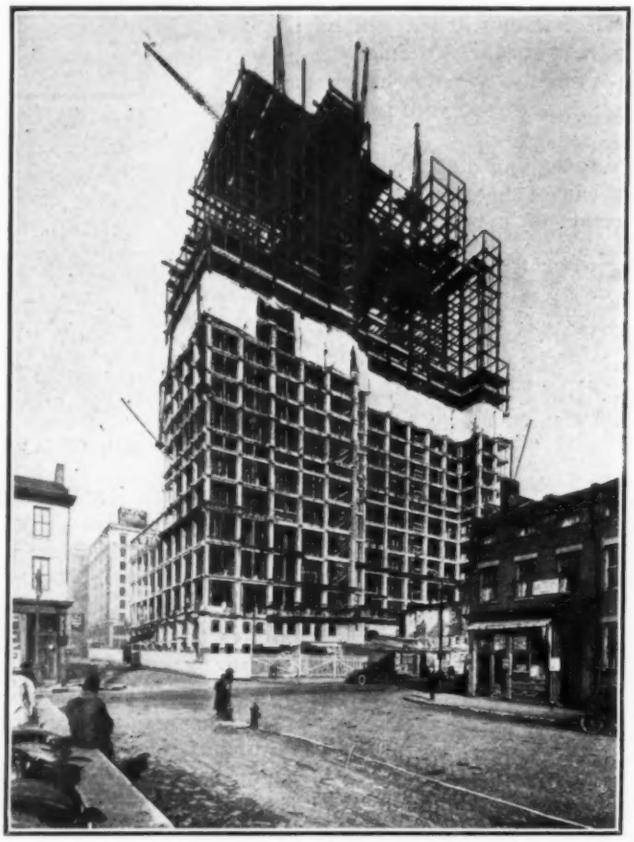
In organizing the maintenance work the county engineers were appointed as maintenance superintendents for their respective counties, and in the counties in which there were no county engineers arrangements were made to combine them with adjacent counties so far as the maintenance work is concerned.

One plan which is expected to help in making the maintenance division run smoothly has been worked out by the accounting department of the Highway Commission. Arrangements have been perfected which make it possible to handle payrolls and warrants on the day that they are received. When a payroll comes in in the morning mail the checks are sent out the same evening. This plan for prompt payment has increased the good feeling among the men in the field and has proved of especial value in retaining the good will of the emergency men who are hired for snow removal and other temporary work.

COVER PICTURE SHOWS ST. LOUIS SKYSCRAPER

THE building which appears on the cover of this issue of Successful Methods is one of the biggest structures now under way in the Middle West. It is being put up for the Southwest Bell Telephone Company in St. Louis and when completed will be the tallest building in the city.

Work on the telephone building was begun early last year and it is expected that the big structure will be finished about September 1st of this year. At present the stone work has been carried about half way up, and as the building is thirty-one stories in height there are fifteen stories yet to go. The exterior should be completed by the first of next month.



The large photograph at the bottom of this page shows the site of the Bell Building as it looked last March and the smaller picture at the top of the page was taken in November.

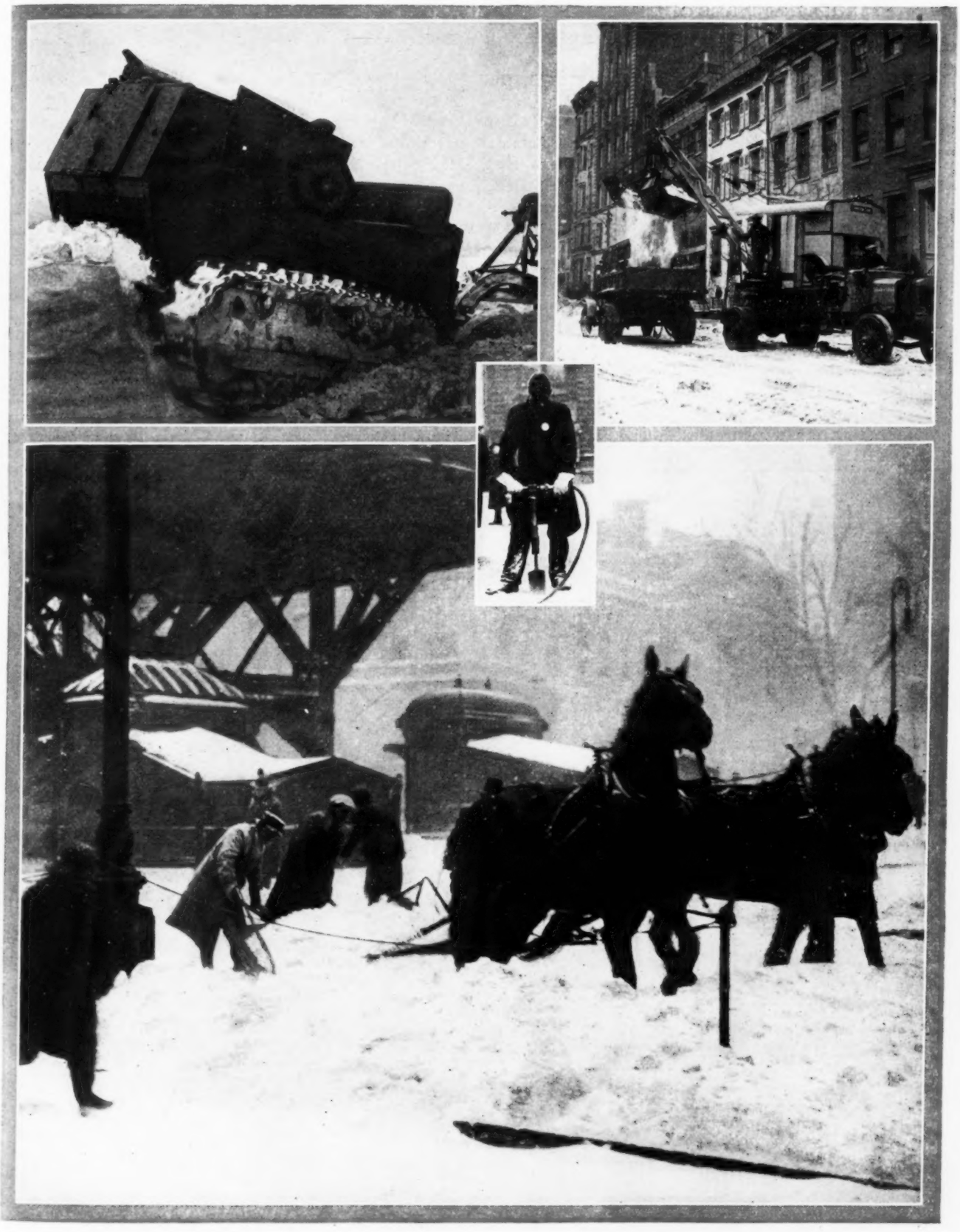
The Westlake Construction Company of St. Louis has the contract, and the architects who designed the building are Mauran, Russell and Crowell, also of St. Louis. The building occupies the block between Tenth, Eleventh, Chestnut and Pine Streets and will cost about $5,000,000.

The Globe-Democrat News Bureau has copyrighted the cover photograph, and the photographs on this page were taken by W. C. Persons.

The cover shows the new building towering over its neighbors.

NEW TELEPHONE BUILDING WILL BE TALLEST IN ST. LOUIS

Construction Equipment Fights Drifts



Construction equipment of various kinds is drafted whenever a big snowstorm blocks the streets of the big cities.

© Keystone, P. & A., International, Kadel & Herbert.

BIG PAVERS PERFORM CONSISTENTLY ON UNUSUAL STREET JOB

Lay Hexagonal Slabs of Five and Six Inch Concrete on Network of Roadways in Longview, Washington

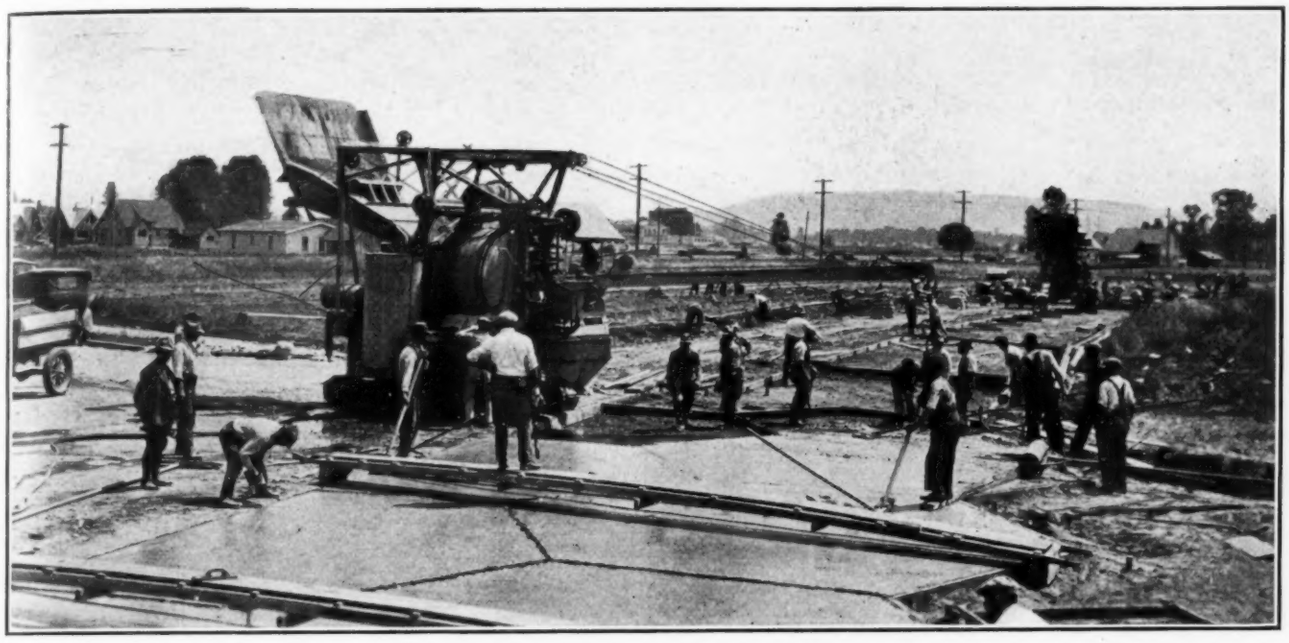
ONE of the most interesting paving jobs in the United States has been in progress during the last few months at Longview, Wash., the city created by the Long Bell Lumber Company on the Columbia River. A special type of pavement laid in hexagonal panels has been used throughout the city of Longview.

It was designed by L. A. Perry, Construction Engineer of the Longview Company, and about 400,000 sq. yd. have been laid. Mr. Perry's object in designing this pavement was to eliminate corner weaknesses. The hexagonal slabs are either complete hexagons or fractional hexagons, depending on the width of the road on which they are laid. Their interior corners are substantially 120 deg., and where 90-deg. corners occur at the edge of the pavement they have been strengthened by increasing the thickness of the slab.

For the actual work of laying this pavement Koehring 21-E pavers were employed, and the records of the job show that the big machines have performed their work consistently throughout the season. Charts kept by Mr. Perry recording the work done by the 21-E pavers during the period extending from the middle of May to the middle of September shows a remarkably even rate of production, the general seasonal average of cu. yd. of concrete placed per machine-hour being 28.33. This average included several weeks in which the weather was not favorable as well as the first week, most of which was devoted to organization work.

After the organization was in good running condition, the lowest point reached was during the weeks of Aug. 14 and Aug. 21, when there were three days of delay due to subgrade preparation, and one day was spent on intersections which, of course, is more difficult than straightaway work. During this week, however, the pavers averaged a rate over 25 cu. yd. per hour. Their best week was between Aug. 28 and Sept. 4.

THIS PHOTOGRAPH SHOWS PAVER AT WORK AND GIVES GOOD IDEA OF HEXAGONAL SLABS AND INTEGRAL CURB

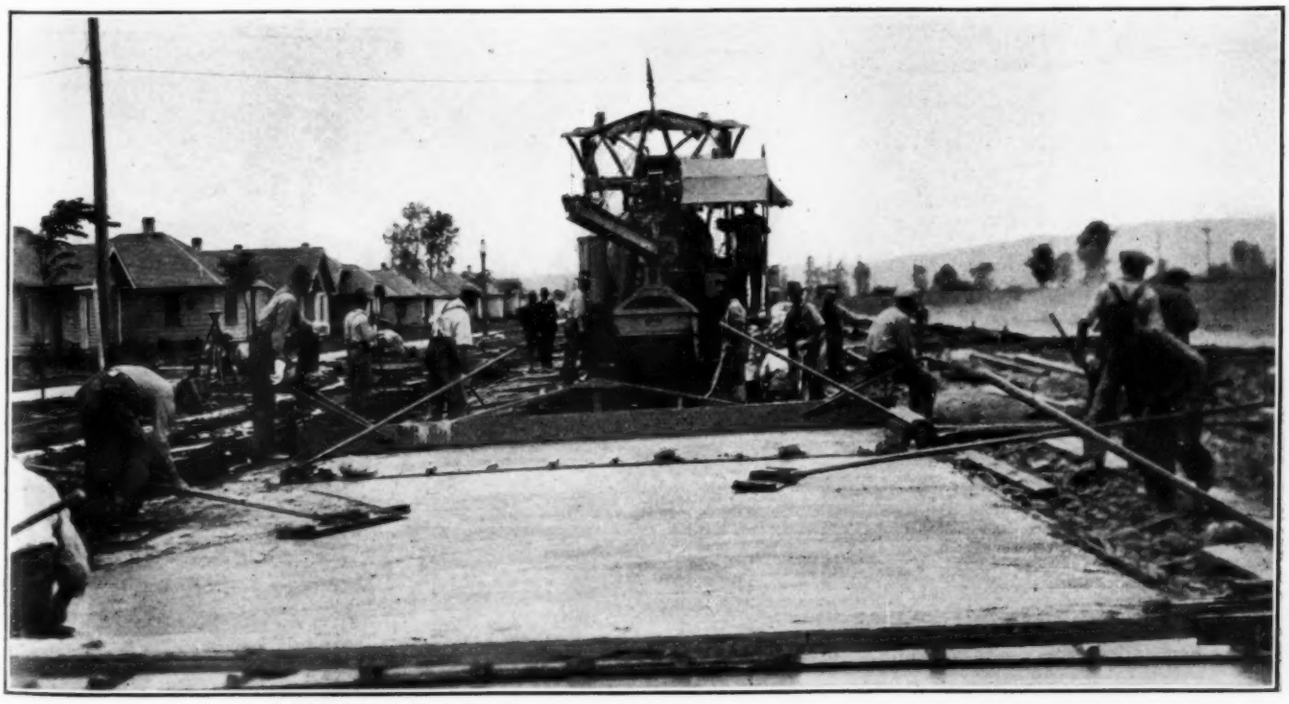


TWO PAVERS ON THE JOB. THE MACHINE IN THE FOREGROUND IS PAVING A STREET INTERSECTION

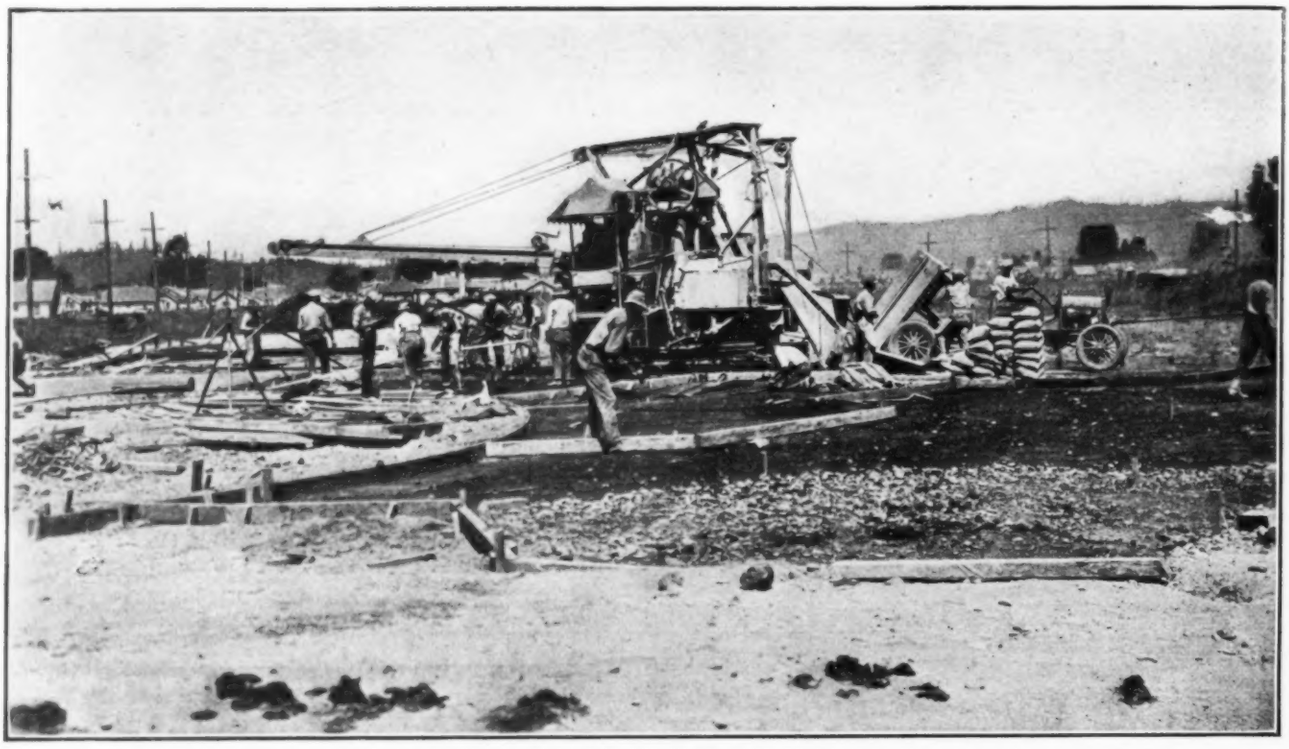
As the pavers worked on 5-in. and 6-in. pavement, records also were kept of the number of square yards of each kind of pavement laid. The general seasonal average for 6-in. pavement per 9-hr. machine day was 1529.82 sq. yd., and the average on 5-in. pavement was 1835.82 sq. yd. The best day's performance was on Aug. 31, when one of the pavers laid 2100 sq. yd. of 6-in. pavement. This pavement was laid on a road 20 ft. wide, consisting of 2 hexagonal panels. In addition, the machine laid 748 lin. ft. of integral curb at each side of the pavement.

The paving gang which made this record consists of 23 men. On the pavement proper the gang consists of one foreman, one mixer operator, two finishers, two finisher's helpers, two rodders, three operators, one roller man, one form setter, three laborers, one utility man and one water boy. In addition to this, the gang working entirely on the integral curb consists of one finisher, one finisher's helper, one form setter and two laborers.

The material that went into the work on this day consisted of 571 bbl. of cement, 165 cu. yd. of sand and 305 cu. yd. of gravel. The machine worked a 9-hr. day and placed 370.5 cu. yd. of concrete.



THE FINISHING GANG AT WORK



THE FORMS USED FOR THE HEXAGONAL SLABS ARE SHOWN IN THIS PHOTOGRAPH

The city of Longview was founded only two years ago by the Long-Bell Lumber Company, and already has a population of more than 7000. Last summer more than 200,000 visitors came to Longview, and it is expected that even more will be on hand next summer so that the new pavements will carry plenty of traffic.

Because of his position as construction engineer of the Longview Company, Mr. Perry has been able to supervise the construction of the hexagonal pavement from the very beginning, and the excellent results which have been accomplished are in a large measure due to him.

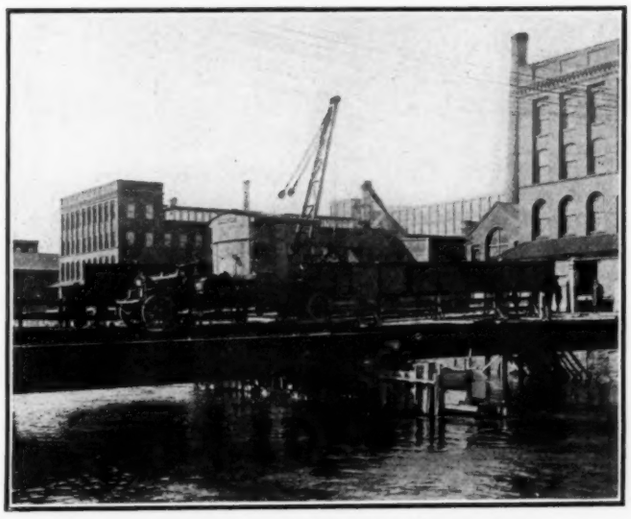
KESSLER BOULEVARD, LONGVIEW, SHOWING FINISHED PAVEMENT

CRANE HANDLES BOTH ENDS OF JOB

Unloads Heavy Girders from Freight Cars, Carries Them to Site of Work and Places Them in Position on Bridge

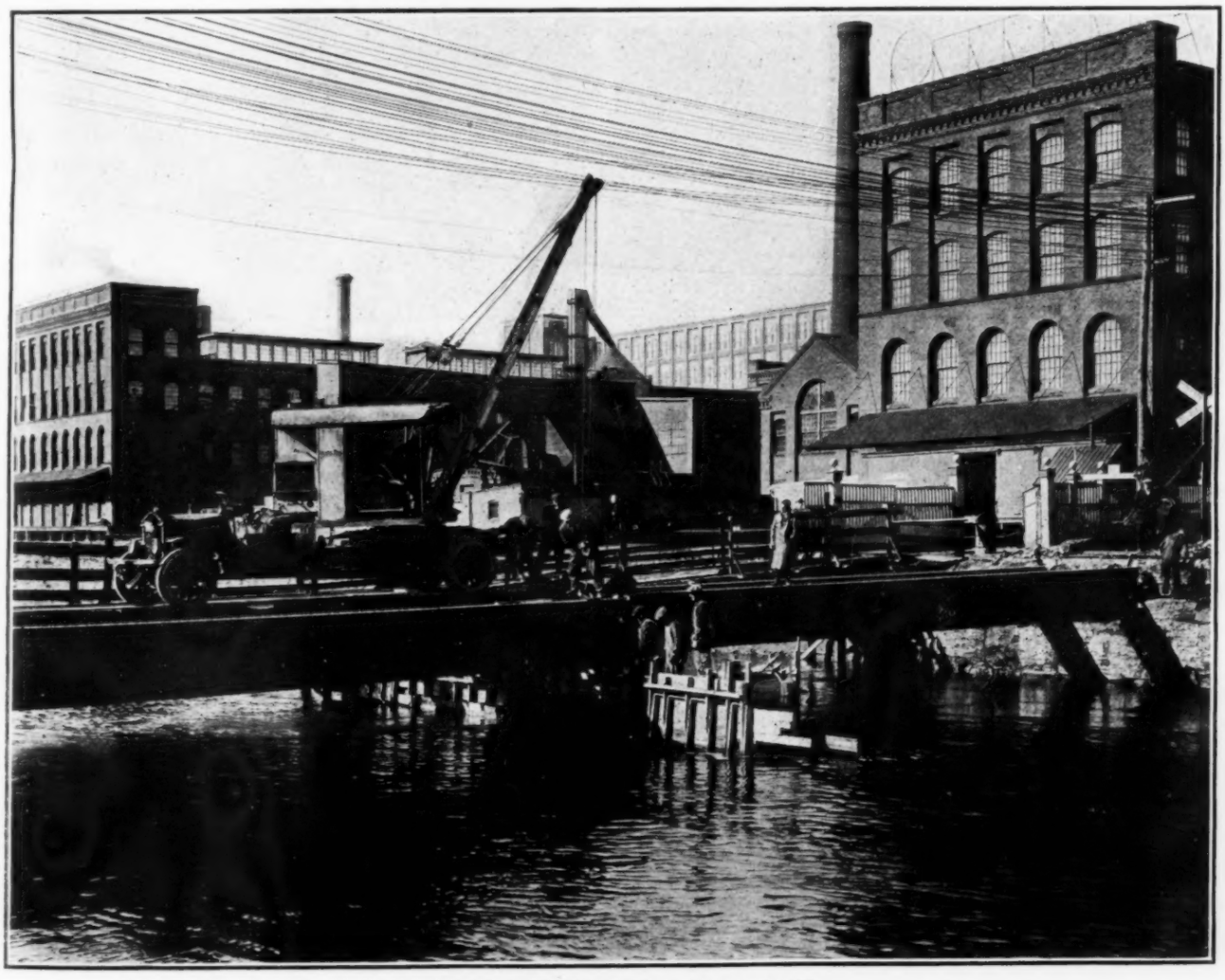
THE use of the same machine to unload steel girders from railroad cars and then place them in position on a bridge assures real economy in construction work. The P. J. Kennedy Company of Holyoke, Mass., recently used a Universal crane mounted on a motor truck in this way and the crane handled both ends of the job without difficulty.

The girders were built-up structural section, each 52 ft. long, 43 in. deep, and weighing 14,000 lb. each. These were delivered on railroad cars to the siding nearest the job, which was 150 ft. away. The Universal was used to unload these and to travel 150 ft. to the job with the seven-ton load suspended and stack them at the bridge abutment for the erection crew. Eight similar girders were unloaded from cars and neatly piled 150 ft. away without the use of auxiliary trucks or trailers in three and one-half hours.



CARRYING GIRDER OUT ON BRIDGE

On the actual erection



CRANE LOWERING GIRDER INTO PLACE

ON THE WAY FROM SIDING TO BRIDGE

of the bridge the crane picked up a girder over the side of the truck at between 9 and 10 ft. radius and swung it over the rear corner of the truck. The entire unit with load suspended was then driven out on to the bridge under power of the truck engine. Some of these moves were as much as 60 ft. The photograph on this page shows the crane which has just picked up a girder and is about to move out on to the bridge.

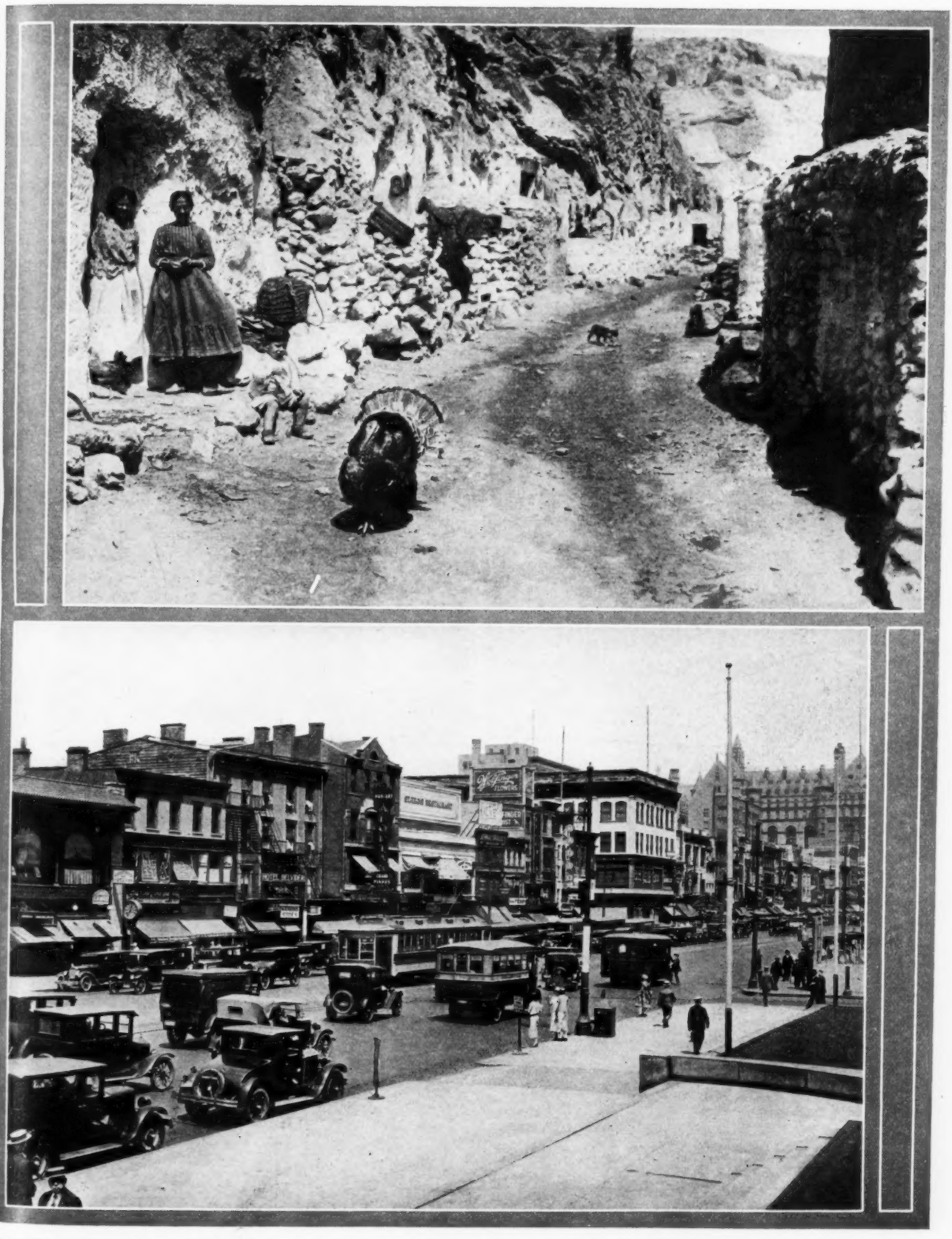
Once out on the false-work of the bridge, the girder was swung over the side of the truck and placed on the piers. The crane was then driven to each end of the girders and used to raise each end and place it in correct and final position on the pier.

The low costs and speed of this job were largely due to the ability of the truck mounted crane to move with load suspended. It was capable of this because of the patented device of jacks and stirrups which eliminate troublesome outriggers. It takes only a few seconds to screw the jacks down on to the rear springs by hand and to automatically set the stirrups which encircle the rear axle. This combination gives stable and rigid rear end the full width of the rear wheel spread. The rear wheels are always free to turn so the unit can be propelled with load suspended without loss of stability. For long moves the jacks are quickly unset by hand and permit full truck spring action on the highways.

Another owner in Louisville, Ky., The Highland Motor Transfer Co., used a Universal to unload 350 tons of steel girders from railroad cars and loaded them on to a 30-ton trailer. The motor truck crane then towed the trailer sixteen and a half miles to the bridge where the girders were unloaded and stacked for the bridge crew. Some of the girders were 58½ ft. long and weighed in the neighborhood of 7000 lb. From this job the crane was driven back into town at truck speed to start an excavating job.

Both of these jobs illustrate the value of a mobile unit that can proceed from one place to another at good speed. The importance of mobility of machinery is coming to be clearly recognized in almost every phase of the construction industry. Contractors know that every hour a machine spends traveling costs money, and any piece of equipment that can get from one job to another in a short time will eliminate one of the most expensive factors in construction work.

Studies in Traffic



A traffic count on the Spanish road shown in the upper photograph would not be difficult. Broad Street in Newark, N. J., is one of the busiest thoroughfares in the world. The section shown, which has to carry the Lincoln Highway traffic in addition to its regular business, was paved with Texaco last fall. © International.

WELL-EQUIPPED PLANT IN CANADA HANDLES BIG VOLUME OF GRAVEL

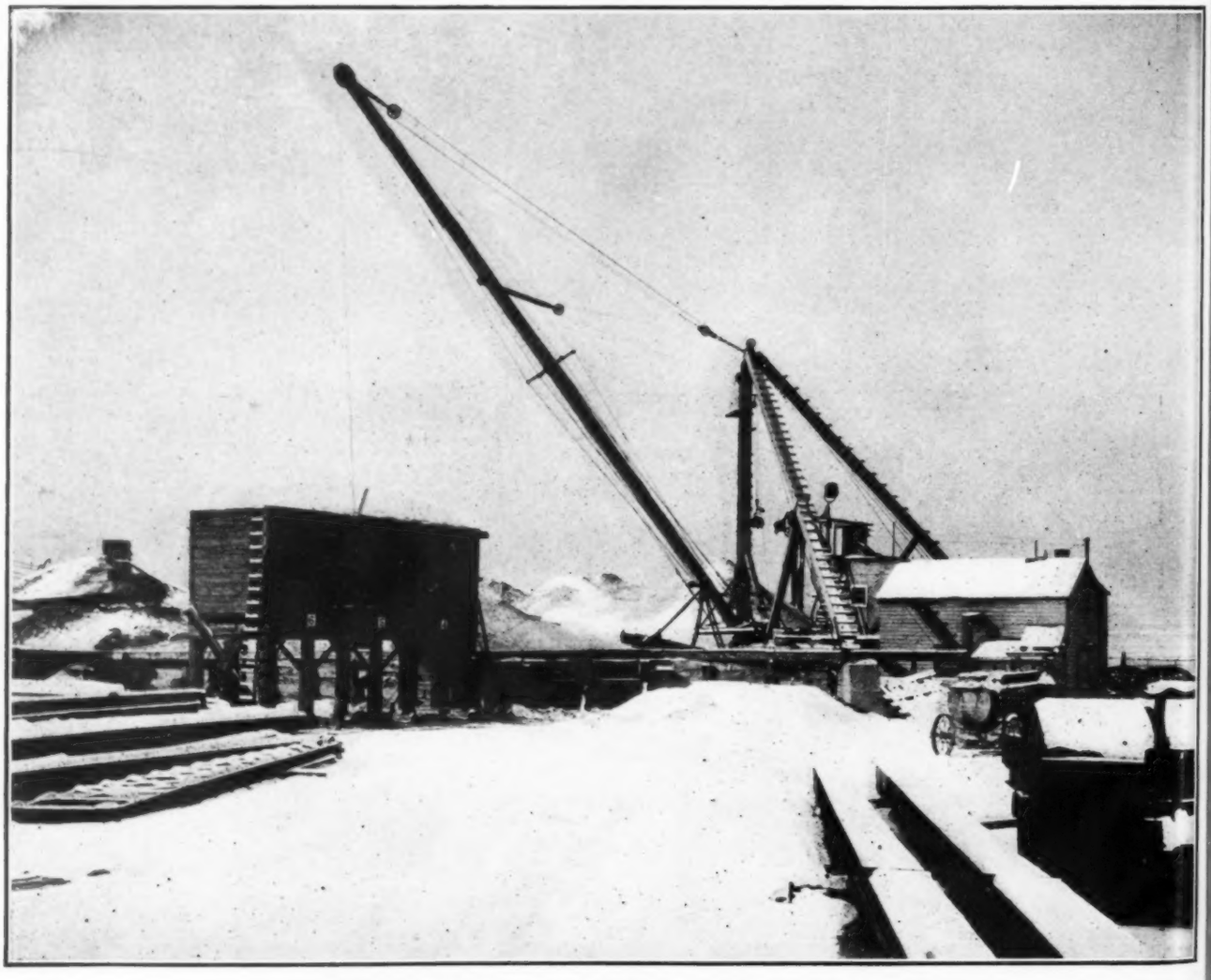
Material Is Obtained at Point on St. Clair River and Brought to Plant in Boat Operated by Subsidiary Company

ON the Canadian side of the Detroit River at Ford, Ontario, the Merlo, Merlo & Ray Company is operating a gravel plant which can handle from 800 to 1000 yd. of gravel every 9-hr. day. The outfit has handled as much as 1400 cu. yd. in a day.

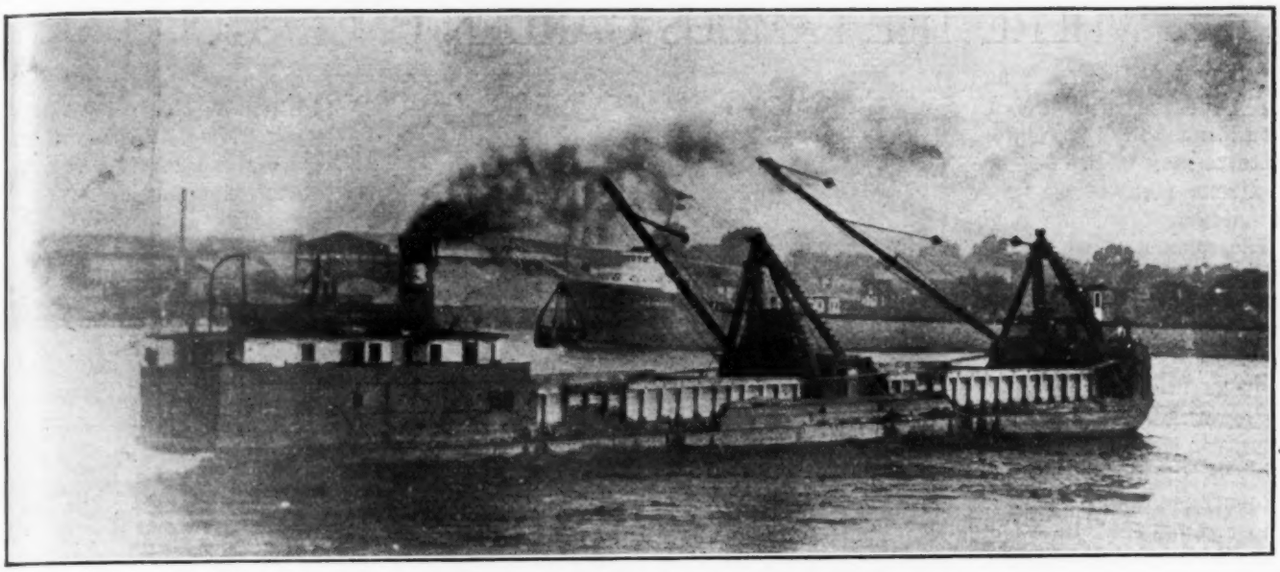
The Merlo, Merlo & Ray organization obtains its gravel from a point on the St. Clair River opposite Sarnia, Ontario. A double ended scow is operated by the Essex Transit Company, a subsidiary of the Merlo, Merlo & Ray Company and makes the round trip in about 36 hr. This boat is equipped with two derricks operated by Clyde 3-drum hoists and with Clyde steam swingers. One of these swingers is new and the other has been on duty for 14 yr. Each derrick handles a 2-yd. clamshell bucket. John Sway is captain of the boat and also operates the derricks at times. In addition, there are three other engineers, Tim La Porte, William Miller and Charles Jacket, which makes it possible to operate the boat day and night, as each derrick has a relief engineer. The boat is shown in the upper photograph on page 19.

At the plant at Ford two derricks are operated, one of them being run by a Clyde hoist, which is 15 yr. old. The equipment at this plant is shown in the two large photographs which accompany this article. The derrick in the photograph at the bottom of this page is at present operated with a 70-ft. boom, but the engineer, James Ernshaw, is planning to replace it with a 90-ft. boom.

In addition to supplying sand and gravel the Merlo, Merlo & Ray Company does contracting work such as excavating, paving and sewer construction on its own account. The photographs, which were taken only a short time ago, give a good idea of the layout



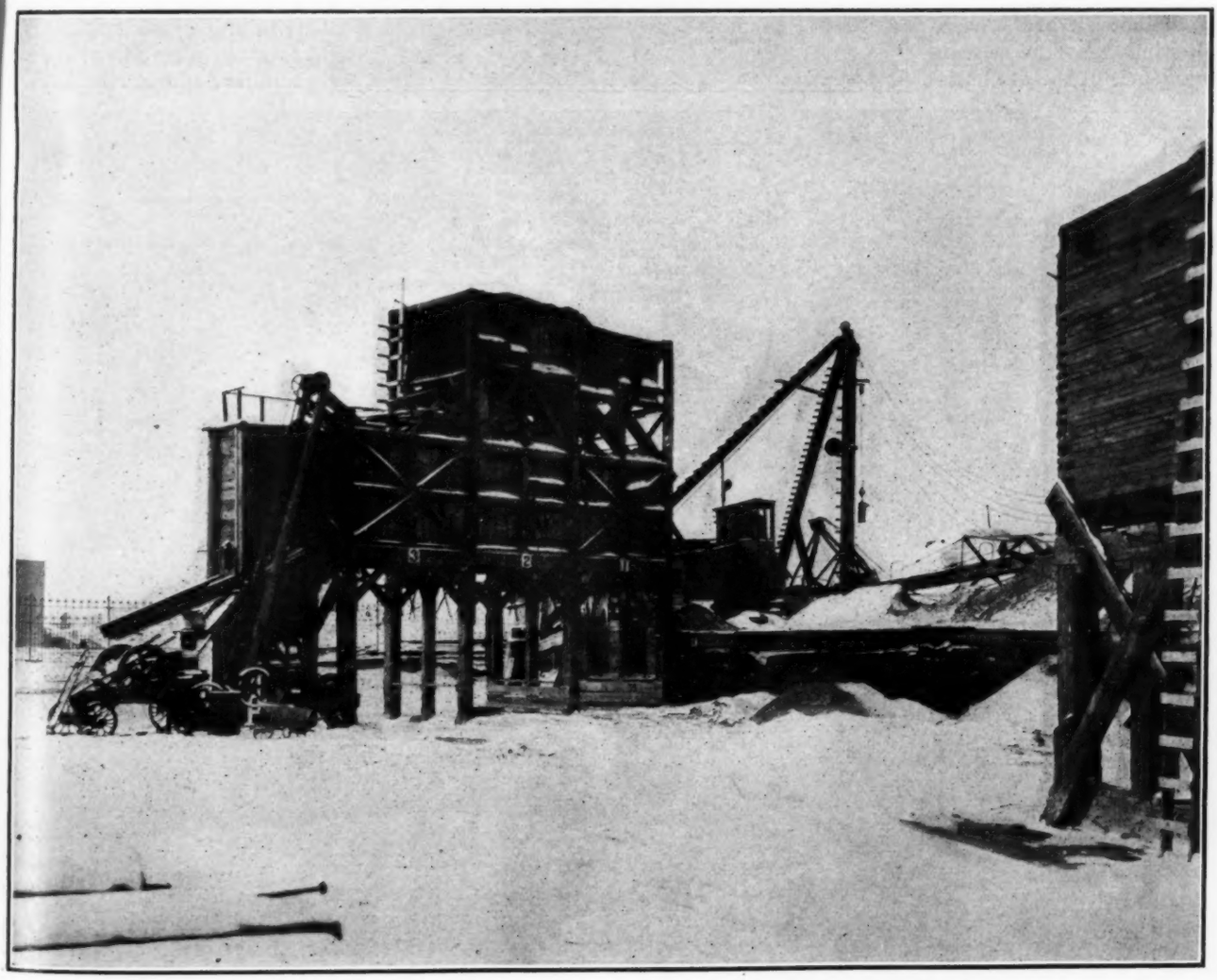
DERRICK AND BINS AT GRAVEL HANDLING PLANT



THE BOAT WHICH BRINGS THE GRAVEL

of the gravel plant as it looks under winter conditions.

The president and general manager of the organization is Louis A. Merlo. Paul Merlo and John Ray are vice-presidents and William Smith is the purchasing agent. All of these men are actively engaged in the management of the company, which has become one of the most important organizations of its kind in that section.



GRAVEL IS GRADED AND OVERSIZED MATERIAL CRUSHED AT THIS POINT

WHERE THE FAMOUS GARDEN ONCE STOOD

ALL that is left of one of the most famous buildings in the United States may be seen at the extreme right of the lower photograph on this page. The colonnade, which may be seen there, was the last bit of Madison Square Garden which was left standing.

The two photographs show the work of excavating for the 30-story building of the New York Life Insurance Company that is to replace the famous old amphitheatre. Foundation work in New York is always a heavy job because of the rocky nature of the soil. On this particular job, which is being handled by the George J. Atwell Company, four Thew steam shovels are at work clearing away the remaining débris of the old building and loading the rock which has been excavated into Mack trucks which are standard with the Atwell organization.

The excavation will cover an entire block between Twenty-sixth and Twenty-seventh streets on Fourth Avenue and will extend 73 ft. below the street level. Approximately 150,000 cu. yd. of material will be removed, of which about 125,000 cu. yd. will be rock. The work is in charge of Joe Walsh, the superintendent, and George Kelly, master mechanic, both of whom have been with the Atwell organization for many years.

Atwell equipment always is painted a bright green, and this color, together with the firm's trademark painted in white, is a familiar sight in New York.

THE SITE OF MADISON SQUARE GARDEN AS IT IS TODAY